

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 – 17 (canceled)

Claim 18 (currently amended): A method which may be used for producing a silicon nitride film by vapor-phase growth, wherein said method comprises:

- a) feeding a first hydrazine gas comprising 1,1-dimethylhydrazine and at least one precursor gas into a reaction chamber, wherein:
 - 1) said precursor gas comprises at least one member selected from the group consisting of:
 - i) trisilylamine gas; and
 - ii) ~~silylhydrazine~~ disilylmethylhydrazine gas; and
 - 2) at least one substrate is located in said reaction chamber; and
- b) forming a silicon nitride film on said substrate by reacting said first hydrazine gas and said precursor gas.

Claim 19 (canceled).

Claim 20 (previously presented): The method of claim 18, further comprising:

- a) creating said precursor gas in a synthesis chamber by reacting a silylamine trisilylamine gas with a second-hydrazine 1,1-dimethylhydrazine gas to form a ~~silylhydrazine~~ disilylmethylhydrazine gas; and
- b) feeding said precursor gas into said reaction chamber from said synthesis chamber.

Claim 21 (cancelled).

Claim 22 (cancelled).

Claim 23 (cancelled).

Claim 24 (previously presented): The method of claim 18, wherein the temperature of the reaction between said precursor gas and said first hydrazine gas is between about 300°C and about 700°C.

Claim 25 (previously presented): The method of claim 18, wherein the pressure in said reaction chamber is between about 0.1 torr and about 1000 torr.

Claim 26 (previously presented): The method of claim 18, further comprising feeding an inert dilution gas into said reaction chamber.

Claim 27 (currently amended): A method which may be used for producing silicon nitride films by vapor-phase growth, said method comprising:

- a) feeding a silylhydrazine gas into a reaction chamber, wherein said chamber contains at least one substrate and wherein said silylhydrazine gas comprises disilylmethylhydrazine; and
- b) forming a silicon nitride film on said substrate by a decomposition of said silylhydrazine gas.

Claim 28 (cancelled).

Claim 29 (currently amended): The method of claim 27, further comprising

- a) creating a silylhydrazine-containing reaction mixture in a synthesis chamber by reacting a silylamine gas with a hydrazine gas; wherein said silylamine gas comprises trisilylamine and said hydrazine gas comprises 1,1-dimethylhydrazine; and
- b) feeding said silylhydrazine-containing reaction mixture into said reaction chamber.

Claim 30 (cancelled).

Claim 31 (cancelled).

Claim 32 (previously presented): The method of claim 27, wherein the decomposition of said silylhydrazine gas is carried out at a temperature between about 300° C and about 700°C.

Claim 33 (previously presented): The method of claim 27, wherein the pressure in said reaction chamber is between about 0.1 torr and about 1000 torr.

Claim 34 (previously presented): The method of claim 27, further comprising feeding an inert dilution gas into said reaction chamber.

Claim 35 (cancelled).